west virginia department of environmental protection

Division of Air Quality
601 57th Street, SE
Charleston, WV 25304
Phone: 304/926-0475 • Fax: 304/926-0479

Jim Justice, Governor
Austin Caperton, Cabinet Secretary
www.dep.wv.gov

Evaluation Memo

Application Number:	PD17-021
Facility ID Number:	107-00001
Name of Applicant:	E. I. Du Pont de Nemours and Company
Name of Facility:	Washington Works
Location of Facility:	Washington, Wood County
Latitude/Longitude:	39.269440/-81.670000°
Application Type:	Permit Determination
Submission Date:	March 30, 2017
Complete Date:	March 30, 2017
Due Date:	**April 29, 2017**
Engineer:	Mike Egnor

Background Information

On March 30, 2017 DuPont Washington Works submitted a Permit Determination Form (PDF) for proposed changes at their Washington Works Facility located at 8480 DuPont Road, Building 24, Washington, WV. According to DuPont, the MPW-1 "melt process" continuous production process for production of nylon resins was originially constructed in 1968 and has not been expanded or modified since that time so this section of the facility is considered grandfathered under 45CSR13. The facility is subject to several R13 Permits. Many previous permit determinations have been submitted for the facility, the latest being in 2016.. This section of the facility is subject to the Title V Permit R30-10700001-2016 Part 5 of 14.

Statutory Authority of the DAQ

The statutory authority of the of the DAQ is given under the Air Pollution Control Act (APCA) - West Virginia Code §22-5-1, et. seq. Based on the language under §22-5-1, et. seq., the

DAQ, in making "stationary source" determinations under 45CSR13, does not take into consideration non-air quality issues such as nuisance potential (noise, sight line obstruction, traffic) or non-air quality environmental impacts.

Description of Process

Description of Proposed change of the MPW-1 (melt process):

MPW-1 is a "melt process" continuous production process for production of nylon resins that is operated at the DuPont Washington Works. It was originally constructed in 1968 and has not been expanded or modified since that time so no Rule 13 permits are applicable. The related but separate process, MPW-2 was constructed in 1977 and is subject to R13-1686G.

For the present process arrangement, molten polymer strands flow from the continuous process die to a quench bath then through a cutter to produce pellets. The pellets pass through a screener which separates oversize and undersize pellets from the correct size product. Most of the dust produced by the cutter is collected in the undersize bin, but some is emitted to the ambient air of the process room.

The intent of the this project is to replace the screener with a device that will allow for cooling air to be pulled through the pellets as they pass through the device, making it a cooler/screener, in order to remove additional heat from the product pellets. The change in air flow will cause all of the dust to be collected and exhausted with the cooling air. The air will pass through a dual cyclone that provides 99% efficiency for the majority of the particulate. Because the cyclone precedes the air blower and must operate properly in order for the blower to remain in operation, it is considered an inherent device and is not an add-on air pollution control device.

The exhaust point from the blower will be a new emission point, to be designated as Z707E. DuPont believes that a construction permit is not required before the changes is made because the associated emissions of PM and PM-10, after product recovery but without a control device, are well below the thresholds of 6 pph and 10 tpy of regulated pollutants and do not include any HAP or TAP compounds.

Air Emissions and Calculation Methodologies

DuPont Washington Works submitted complex and detailed emissions calculations of the emissions increase associated with the proposed change discussed above. Calculations for the product and handling system type are based on an emission factor of 0.0002 lbs particulate per lb of product. This factor is an engineering estimate that is used for most pellet handling vent types in the MPW-1 an MPW-2 areas.

The particulate size distribution was determined from measurement of the fines collected for the pelletizer for this unit.

The maximum production rate is 7,800 lbs/hr.

7,800 lbs/hr pellets x 0.00002 lb PM total/lb pellets = 1.56 lbs/hr.

Because the cyclone is considered an inherent device and is not an add-on air pollution control device, the PTE of PM is 0.04 lbs/hr and 0.16 TPY. The PTE of PM_{10} is less than 0.01 lbs/hr and 0.01 TPY.

Determination of Permit Applicability

Pursuant to §45-13-5.1, "[n]o person shall cause, suffer, allow or permit the . . . modification . . . and operation of any stationary source to be commenced without . . . obtaining a permit to . . . modify." The definition of "modify" is given under Section 2.17 of 45CSR13 and primarily defines various emission levels that would define any proposed changes as a modification and require DuPont Washington Works to get a permit prior to construction. Based on the emission estimate submitted by DuPont Washington Works as discussed above, the proposed changes do not exceed any of the modification thresholds under §45-13-2.17.

Summary and Recommendation

Based on the information provided by DuPont, I recommend the issuance of a "no permit needed" letter to DuPont Washington Works for the proposed changes at their Washington Works Facility.

Mike Egnor
Engineer

4/10/17
Date